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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/655,858	09/05/2003	Gary D. Sharp	95121961.206001	7273

23562 7590 01/21/2005

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PATENT DEPARTMENT
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EXAMINER	
CURTIS, CRAIG	
ART UNIT	**PAPER NUMBER**
2872	

DATE MAILED: 01/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/655,858	SHARP, GARY D.	
	Examiner	Art Unit	
	Craig Curtis	2872	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-53 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-53 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 12/05/2003.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1-3, 10, and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Black et al. (US 5,382,986 A).

With regard to claim 1, Black et al. disclose the invention as claimed--[a]n optical filter for vision [see Figs. 1 & 2] comprising:

an input-polarizing element [44 in Fig. 2; also see column 4, lines 35-38];

an output-polarizing element [46 in Fig. 2; also see column 4, lines 35-38]; and

a retarder stack [i.e., liquid crystal cell 50 in Fig. 2, (50a-50b inclusive)] between the input polarizing element and the output polarizing element [see Fig. 2]; wherein the input polarizing element, the output polarizing element, and the retarder stack, at least partially positioned in a filed of view [see Figs. 1 & 2], substantially filter at least one band of light [the color-changing of liquid-crystal lenses 12 and 14 described in column 7, lines 64-67—column 8, lines 1-30 of the **Black et al.** patent inevitably corresponding to substantial filtering of at least one band of light].

With regard to claims 2 and 3, Black et al. further disclose wherein the optical filter is configured for human vision; and the input polarizing element, the output polarizing element,

and the retarder stack, are adapted to be positioned at least partially in a human's field of view. See, e.g., Fig. 1, it being noted that humans are animals.

With regard to claim 10, Black et al. also teach wherein the input polarizing element, the output polarizing element, and the retarder stack, filter light so as to maintain a color neutral appearance. See, e.g., column 9, lines 1-8, especially lines 4-8.

With regard to claim 11, Black et al. also teach wherein the optical filter is one of a pair of sunglasses, a canopy for a helmet, or a visor: namely, a pair of sunglasses.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 4-9 and 12-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Black et al. (US 5,382,986 A) in view of Thornton Jr. (US 4,826,286 A).

With regard to claims 4-9, Black et al. discloses the claimed invention as set forth above **EXCEPT FOR** explicit teachings of the following respectively recited limitations:

wherein the at least one band of light is an inter-primary band of light [defined in the specification as being 500 nm cyan or 580 nm yellow light];

wherein the at least one band of light has a wavelength that is smaller than or equal to about 400 nm;

wherein the at least one band of light has a wavelength that is greater than or equal to about 700 nm;

wherein the at least one band of light has a wavelength of about 500 nm;

wherein the at least one band of light has a wavelength of about 580 nm; and

wherein at least two inter-primary bands of light are filtered.

Thornton Jr., however, discloses a filter system for a human visual system that limits the total radiation energy impinging upon the eye [see Figs. 10-12]; more specifically, Fig. 10 of **Thornton Jr.** shows that **with regard to claim 4**, at least one band of inter-primary light is substantially filtered [i.e., either light near 500 nm or that near 580 nm]; that **with regard to claim 5**, that light having a wavelength smaller than about 400 nm is substantially filtered; that **with regard to claim 6**, light having a wavelength that is greater than or equal to about 700 nm is filtered; that **with regard to claim 7**, light having a wavelength of about 500 nm is substantially filtered; that **with regard to claim 8**, light having a wavelength of about 580 nm is substantially filtered; and that **with regard to claim 9**, at least two inter-primary bands of light are filtered [see light near 500 nm and that near 580 nm].

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the invention of **Black et al.** such that optical filter for vision disclosed therein be modified, consistent with the teachings disclosed by **Thornton Jr.**, such that it filter light in the wavelength bands specifically set forth above, for at least the purpose of limiting the total radiation energy impinging upon the eyes of a human or animal outfitted with said optical filter.

With regard to claims 12-15, Black et al. discloses the claimed invention as set forth above **EXCEPT FOR** explicit teachings wherein, **with particular reference to claims 12 and 15, respectively,** said optical filter substantially filters light to improve color deficient vision and

wherein the light that is substantially filtered is that at wavelengths of about 500 nm and about 580 nm.

Thornton Jr., however, discloses an optical filter that substantially filters light to improve color deficient vision [via, i.e., improving the vision associated with the transmission of a limited number of colors by the judicious removal of selected color components]. See, e.g., column 2, lines 40-45 & lines 59-62. **And with specific reference to claim 15**, please see Fig. 10 of **Thornton Jr.**, which depicts the substantial filtering of light having wavelengths of about 500 nm and about 580 nm. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the invention of **Black et al.** such that its optical filter substantially filter light to improve color deficient vision generally, as well as wherein the light that is substantially filtered is that at wavelengths of about 500 nm and about 580 nm, using as motivation for such modification the above-referenced teachings by **Thornton Jr.**, for at least the purpose of enhancing the overall viewing quality experienced by users of said optical filter.

With regard to claims 16-19 Black et al. discloses the claimed invention as set forth above **EXCEPT FOR** explicit teachings wherein, **with particular reference to claims 16 and 19**, respectively, said optical filter substantially filters harmful light rays, and wherein said harmful rays are laser light rays.

Thornton Jr., however, discloses an optical filter that substantially filters harmful light rays [see Fig. 10, which shows zero transmission of light having wavelengths shorter than 400 nm—i.e., harmful UV light]. **And with specific reference to claim 19**, the optical filter taught by **Thornton Jr.** is described therein as being particularly useful for laser protection [see column

6, lines 9-13, it being noted that many lasers operate in the UV region of the electromagnetic spectrum—e.g., the 249 nm output of the XeCl laser; the 325 nm output of the HeCd laser, etc.]. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the invention of **Black et al.** such that its optical filter substantially filter harmful light rays, including laser light, using as motivation the above-referenced teachings by **Thornton Jr.**, for at least the purpose of ensuring that a user of said optical filter of the combination not needlessly be exposed to harmful light rays [be they ambient (e.g., UVA/UVB light rays from the sun) or artificial (e.g., light rays from UV lasers)].

With regard to claims 20-22, the combination discloses the claimed invention as set forth hereinbefore, including wherein, with specific reference to claim 20, at least two bands of light are substantially attenuated. Please see Fig. 10 in the **Thornton Jr.** patent.

With regard to claim 23, it is noted that while **the combination** does not explicitly disclose wherein a power spectrum of the input polarizing element, the output polarizing element, and the retarder stack is selected such that color saturation is increased, such selection is otherwise made implicit by the disclosure of **the combination**. More specifically, inasmuch as the power spectrum of a given optical system merely represents a plot of the portion of a signal's power (i.e., energy per unit time) that falls within (alt. that is contributed by) a given frequency bin, while color saturation equates with little or no white, the disclosure by **the combination** wherein at least two bands of light (in the visible spectrum, incidentally) are substantially attenuated—namely, those wavelengths around 500 nm and 580 nm (see Fig. 10 in **Thornton Jr.**)—is taken to meet the limitation in this claim that a power spectrum of the input polarizing element, the output polarizing element, and the retarder stack is selected such that color

saturation is increased—namely, with respect to the color saturation that would obtain if a power spectrum of the input polarizing element, the output polarizing element, and the retarder stack were selected such that the above-referenced at least two bands of light were not substantially attenuated.

With regard to claim 24, the optical filter of **the combination** would present a color-neutral power spectrum—assuming, of course, an equal weighting of all input optical wavelengths/frequencies--in the event that all the pixels of the retarder stack taught by **Black et al.** were to be energized.

With regard to claim 25, the power spectrum of the optical filter of **the combination** is impliedly selected to improve color-deficient vision. Please refer to the comments made hereinbefore with regard to the rejection of a like limitation recited in claim 12.

With regard to claim 26, although the combination does not explicitly disclose wherein the color-deficient vision is color blindness, the optical filter of the combination would in fact arguably improve color deficient vision in a person who is, e.g., red-green color blind.

With regard to claim 27, said optical filter of the combination comprises a lens. See, e.g., 12 or 14 in Fig. 1 of **Black et al.**

With regard to claim 28-30, the combination discloses an optical filter for enhancing vision and/or protecting eyes from harmful light rays, comprising a pair of polarizing elements that sandwich a retarder stack, as set forth above (see especially the rejection of claims 12-15), wherein the optical filter has a spectral transmission providing, for the sake of example, attenuation of harmful light rays (*id.*), said optical filter being configured for human vision and

animal vision (humans being animals), as well as being positioned in a human's or animal's field of view.

With regard to claim 31, the combination at least impliedly discloses wherein the optical filter is a double-notch filters that blocks inter-primary light. See especially Fig. 10 of the **Thornton Jr.** patent.

With regard to claim 32, the optical filter of **the combination** would in fact be color neutral—assuming an equal weighting of all input optical wavelengths/frequencies--in the event that all the pixels of the retarder stack taught by **Black et al.** were to be energized.

With regard to claim 33, it is submitted that the optical filter of **the combination** increases color saturation. Please see the comments made hereinbefore in reference to the rejection of a like limitation recited in claim 23.

With regard to claim 34, the optical filter of **the combination** is a pair of sunglasses.

With regard to claims 35 and 36, the structural teachings of the combination set out hereinbefore implicitly meet the method step teachings set out in these claims; more specifically, output polarizer(s) 46 taught by **Black et al.** are positioned to analyze light rotated by the retarder stack disclosed therein, and it necessarily is the case that rotation of light is determined in accordance with one or both of: predetermined lighting conditions of an environment; and a person's vision.

With regard to claim 37-40, please see the teachings by **the combination** of the filtering of light by the optical filter of same to substantially reduce at least two near zero [read: near-zero] chromaticity response bands of light—namely, the near-chromaticity response band near 500 nm and that near 580 nm (please see Fig. 10 in **Thornton Jr.**).

With regard to claim 41, the combination additionally teaches wherein the optical filter of same substantially reduce at least three near-zero chromaticity response bands of light—see, in particular, any three of the four near-zero chromaticity response bands of light depicted in Fig. 9 of the **Thornton Jr.** reference.

With regard to claim 42-44, the combination explicitly discloses wherein an optical filter for vision, comprising an input polarizing element; an output polarizing element; and a retarder stack between the input polarizing element and the output polarizing element; wherein the retarder stack, the input polarizing element, and the output polarizing element, at least partially positioned in a field of view, have a light transmittancy at 450 nm, 540 nm and 610 nm that is greater than a light transmittancy at 500 nm or 580 nm (please see Fig. 10 in the **Thornton Jr.** reference), as well as, of course, where said optical filter is adapted to be positioned in at least partially in a human's or animal's field of view.

3. Claims 45-53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Black et al. (US 5,382,986 A) in view of Thornton Jr. (US 4,826,286 A), and further in view of Ábrahám et al. (US 5,774,202 A).

With regard to claim 45, the combination discloses the claimed invention as set forth in detail hereinbefore **EXCEPT FOR** an explicit teaching wherein said method for improving a person's or animal's vision comprises the following method steps:

determining an initial spectral profile of said person's or animal's vision;

determining a desired spectral profile for the person's or animal's vision; and

providing eyewear for the person or the animal configured to substantially filter at least one band of light to compensate for the difference between the desired spectral profile and the initial spectral profile.

Ábrahám et al., however, explicitly disclose a method [see, e.g., claim 1: column 13, lines 58-67—column 14, lines 1-7 therein] for improving [read: modifying] a person's or animal's vision [read: color vision]. It would have been obvious to one having ordinary skill in the art at the time the invention of **the combination** was made to have modified the invention of same such that it further comprise the method steps of (1) determining an initial spectral profile of said person's or animal's vision, (2) determining a desired spectral profile for the person's or animal's vision, and (3) providing eyewear for the person or the animal configured to substantially filter at least one band of light to compensate for the difference between the desired spectral profile and the initial spectral profile, taking as motivation the express teachings of **Ábrahám et al.**, for at least the purpose of improving or otherwise modifying human or animal color vision.

With regard to claim 46, the combination further discloses wherein the input-polarizing element, the output-polarizing element, and the retarder stack, substantially filter at least one inter-primary band of light. Please see above and Fig. 10 of the **Thornton et al.** reference.

With regard to claim 47, the combination explicitly discloses wherein said eyewear has a light transmittancy at 450 nm, 540 nm and 610 nm that is greater than a light transmittancy at 500 nm or 580 nm. Please see Fig. 10 of the **Thornton et al.** reference.

With regard to claim 48, the combination explicitly discloses wherein said eyewear is a wavelength-selective polarizing filter. Please see, e.g., Fig. 10 of the **Thornton et al.** reference.

With regard to claim 49, it is noted that while **the combination** does not explicitly disclose wherein a power spectrum of the input polarizing element, the output polarizing element, and the retarder stack is selected such that color saturation is increased, such selection is otherwise made implicit by the disclosure of **the combination**. More specifically, inasmuch as the power spectrum of a given optical system merely represents a plot of the portion of a signal's power (i.e., energy per unit time) that falls within (alt. that is contributed by) a given frequency bin, while color saturation equates with little or no white, the disclosure by **the combination** wherein at least two bands of light (in the visible spectrum, incidentally) are substantially attenuated—namely, those wavelengths around 500 nm and 580 nm (see Fig. 10 in **Thornton Jr.**)—is taken to meet the limitation in this claim that a power spectrum of the input polarizing element, the output polarizing element, and the retarder stack is selected such that color saturation is increased—namely, with respect to the color saturation that would obtain if a power spectrum of the input polarizing element, the output polarizing element, and the retarder stack were selected such that the above-referenced at least two bands of light were not substantially attenuated.

With regard to claim 50, the optical filter of **the combination** would present a color-neutral power spectrum—assuming, of course, an equal weighting of all input optical wavelengths/frequencies--in the event that all the pixels of the retarder stack taught by **Black et al.** were to be energized.

With regard to claim 51, the power spectrum of the optical filter of **the combination** is impliedly selected to improve color-deficient vision. Please refer to the comments made hereinbefore with regard to the rejection of a like limitation recited in claims 12 and 25.

With regard to claim 52, the optical filter taught by **the combination** substantially filters light so as to protect the person's or animal's vision from harmful rays. Please refer to the comments made hereinbefore regarding a like limitation recited in claim 16.

With regard to claim 53, the combination, as addressed hereinbefore, also teaches wherein the input polarizing element, the output polarizing element, and the retarder stack, filter light to substantially reduce at least one near zero chromaticity response band of light. Please see, e.g., the comments made above in the rejection of a like limitation recited in claim 37.

Contact Information

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Craig Curtis, whose telephone number is (571) 272-2311. The examiner can normally be reached on Monday-Friday, 9:00 A.M. to 6:00 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew A. Dunn, can be reached at (571) 272-2312. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

C.H.C.
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Group Art Unit 2872
13 January 2005

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